

INTERNATIONAL SEARCH REPORT  
REC'D PTO 07 SEP 2004

International application No. PCT/JP02/05666

A. CLASSIFICATION OF SUBJECT MATTER  
Int.Cl<sup>7</sup> G02B6/38

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
Int.Cl<sup>7</sup> G02B6/38

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

|                           |           |                            |           |
|---------------------------|-----------|----------------------------|-----------|
| Jitsuyo Shinan Koho       | 1922-1996 | Toroku Jitsuyo Shinan Koho | 1994-2002 |
| Kokai Jitsuyo Shinan Koho | 1971-2002 | Jitsuyo Shinan Toroku Koho | 1996-2002 |

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No.        |
|-----------|--|------------------------------|
| X<br>Y    | Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 53783/1986 (Laid-open No. 164304/1987) (Japan National Oil Corp.), 19 October, 1987 (19.10.87), Page 4, line 15 to page 5, line 9; Fig. 1 (Family: none)      | 1,2,5,7<br>3,4,6,8-11        |
| X<br>Y    | Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 80750/1981 (Laid-open No. 192511/1982) (Omron Tateisi Electronics Co.), 01 June, 1982 (01.06.82), Page 4, line 10 to page 6, line 19; drawings (Family: none) | 1,2,5,9<br>3,4,6-8,<br>10,11 |

 Further documents are listed in the continuation of Box C. See patent family annex.

|   |  |
|---|--|
| * Special categories of cited documents:  |  |
| "A" document defining the general state of the art which is not considered to be of particular relevance  | "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  |
| "E" earlier document but published on or after the international filing date  | "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone   |
| "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) | "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art |
| "O" document referring to an oral disclosure, use, exhibition or other means  | "&" document member of the same patent family  |
| "P" document published prior to the international filing date but later than the priority date claimed  |  |

Date of the actual completion of the international search  
25 September, 2002 (25.09.02)Date of mailing of the international search report  
08 October, 2002 (08.10.02)Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP02/05666

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|-----------|---|-----------------------|
| X         | JP 63-15563 B2 (Gebauer & Griller Kabelwerke GmbH), 05 April, 1988 (05.04.88), Page 2, right column, lines 24 to 35, 44 to page 3, left column, line 6; Figs. 4a, 4b, 5a, 5b & EP 207926 A & AT 8501998 A & AU 8659140 A  | 1,2,9<br>3-8,10,11    |
| X         | JP 62-240912 A (Matsushita Electric Industrial Co., Ltd.), 21 October, 1987 (21.10.87), Page 2, upper right column, line 17 to lower left column, line 4; Fig. 1 (Family: none)   | 1,2<br>3-11           |
| X         | Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 76159/1980 (Laid-open No. 709/1982) (Matsushita Electric Works, Ltd.), 30 May, 1983 (30.05.83), Page 2, line 1 to page 4, line 12; Figs. 1 to 2 (Family: none) | 1,2<br>3-11           |
| X         | Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 129938/1975 (Laid-open No. 43442/1977) (The Furukawa Electric Co., Ltd.), 22 September, 1977 (22.09.77), Page 1, lines 12 to 18; Fig. 1 (Family: none)         | 1,2<br>3-11           |
| X         | US 4913513 A (Shinko Sangyo Satsubi Yugen Kaisha), 03 April, 1990 (03.04.90), Column 2; line 57 to column 3, line 31; Figs. 1 to 2 (Family: none)   | 1,9<br>2-8,10,11      |
| Y         | JP 5-164941 A (Emitto Seiko Kabushiki Kaisha), 29 June, 1993 (29.06.93), Par. Nos. [0012] to [0013]; Figs. 1 to 2 (Family: none)  | 11                    |
| A         | JP 2002-156551 A (Kyocera Corp.), 31 May, 2002 (31.05.02), Par. No. [0030] (Family: none)   | 5-7                   |
| A         | EP 1134603 A1 (Nippon Ferrule Co., Ltd.), 19 September, 2001 (19.09.01), Page 13, right column, lines 35 to 42 & WO 00/31574 A1 Claim 1 & AU 200014092 A & KR 2001093107 A & CN 1328651 A   | 8,10                  |

**INTERNATIONAL SEARCH REPORT**International application No.  
PCT/JP02/05666**Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

"A special technical feature" in claims 1-11 relates to "ferrules having the male protrusion end of the first ferrule and the female recess end of the second ferrule kept in tight contact, and "a special technical feature" in claims 12-19 relates to "a sleeve provided with a plurality of protrusions that are provided on the inner peripheral surface of the sleeve body to be rotary-symmetrical with respect to the center axis of the sleeve body and have the identical height.

These inventions are not considered to be so linked as to form a single general inventive concept, because there is no technical relationship among those inventions involving one or more of the same or corresponding technical features.

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-11

**Remark on Protest**

- The additional search fees were accompanied by the applicant's protest.  
 No protest accompanied the payment of additional search fees.